

IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~striketrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please ADD new claims 10-12 in accordance with the following:

1. (Previously Presented) A high-frequency-corresponding simulation apparatus comprising:

an element setting unit which sets a plurality of elements corresponding to wiring patterns in accordance with circuit design information;

a resistance-value calculation unit which calculates the total of resistance values each of which is the sum of the DC resistance value and skin resistance value of each of the elements as the total resistance value;

a first determination unit which determines whether the total resistance value is less than a first threshold value;

a sorting unit which sorts resistance values corresponding to the elements when the total resistance value is equal to or larger than the first threshold value in accordance with a determination result by said first determination unit;

a second determination unit which integrates the resistance values starting with a resistance value having the smallest high-frequency element delay and determines whether the integration result reaches a value immediately before a second threshold value whenever the integration is executed; and

an analysis unit which executes an analysis by using at least one of the elements corresponding to an integrated resistance value as a RLC model and using other elements than the at least one of said elements as high-frequency element models when said second determination unit determines that the integration result reaches the value immediately before the second threshold value.

2. (Original) The high-frequency-corresponding simulation apparatus according to claim 1, wherein said analysis unit executes an analysis by using all elements as RLC models when the total resistance value is less than the first threshold value.

3. (Original) The high-frequency-corresponding simulation apparatus according to claim 1, wherein said analysis unit superimposes a skin resistance value on a DC resistance value of a RLC model.

4. (Original) The high-frequency-corresponding simulation apparatus according to claim 1, further comprising a setting change unit which changes the value of the second threshold value.

5. (Original) The high-frequency-corresponding simulation apparatus according to claim 4, wherein said setting change unit also changes the value of a skin resistance value to be superimposed on the DC resistance value.

6. (Original) The high-frequency-corresponding simulation apparatus according to claim 1, wherein said circuit is constituted of a plurality of substrates.

7. (Previously Presented) A high-frequency-corresponding simulation method comprising the steps of:

setting a plurality of elements corresponding to wiring patterns in accordance with circuit design information;

calculating the total of resistance values each of which is the sum of the DC resistance value and skin resistance value of each of the elements as the total resistance value;

determining whether the total resistance value is less than a first threshold value;

sorting resistance values corresponding to the elements by using a high-frequency element delay as a key when it is determined that the total resistance value is equal to or larger than the first threshold value;

integrating the resistance values starting with a resistance value having the smallest high-frequency element delay;

determining whether the result of integration reaches a value immediately before a second threshold value whenever the integration is executed; and

executing an analysis by using at least one of the elements corresponding to an integrated resistance value as a RLC model and using other elements than the at least one of said elements as high-frequency element models when it is determined that the integration result reaches the value immediately before the second threshold value.

8. (Previously Presented) A computer-readable recording medium which stores a computer program which when executed on a computer realizes the steps of:

- setting a plurality of elements corresponding to wiring patterns in accordance with circuit design information;

- calculating the total of resistance values each of which is the sum of the DC resistance value and skin resistance value of each of the elements as the total resistance value;

- determining whether the total resistance value is less than a first threshold value;

- sorting resistance values corresponding to the elements by using a high-frequency element delay as a key when it is determined that the total resistance value is equal to or larger than the first threshold value;

- integrating the resistance values starting with a resistance value having the smallest high-frequency element delay;

- determining whether the result of integration reaches a value immediately before a second threshold value whenever the integration is executed; and

- executing an analysis by using at least one of the elements corresponding to an integrated resistance value as a RLC model and using other elements than the at least one of said elements as high-frequency element models when it is determined that the integration result reaches the value immediately before the second threshold value.

9. (Previously Presented) A computer program which when executed on a computer realizes the steps of:

- setting a plurality of elements corresponding to wiring patterns in accordance with circuit design information;

- calculating the total of resistance values each of which is the sum of the DC resistance value and skin resistance value of each of the elements as the total resistance value;

- determining whether the total resistance value is less than a first threshold value;

- sorting resistance values corresponding to the elements by using a high-frequency element delay as a key when it is determined that the total resistance value is equal to or larger than the first threshold value;

- integrating the resistance values starting with a resistance value having the smallest high-frequency element delay;

- determining whether the result of integration reaches a value immediately before a second threshold value whenever the integration is executed; and

executing an analysis by using at least one of the elements corresponding to an integrated resistance value as a RLC model and using other elements than the at least one of said elements as high-frequency element models when it is determined that the integration result reaches the value immediately before the second threshold value.

10. (New) A high-frequency simulation apparatus for a circuit, comprising:

a first determination unit determining a total of resistance values, each resistance value being a sum of a direct current resistance value and a skin resistance value of a corresponding element in the circuit to be simulated;

a second determination unit determining whether the total resistance value is less than a first threshold value;

a sorting unit sorting the resistance values corresponding to the elements of the circuit when the total resistance value is at least equal to the first threshold value according to said second determination unit, to produce sorted resistance values; and

a third determination unit determining an integration result, obtained by integrating as many as possible of the sorted resistance values that can be integrated without exceeding a second threshold value.

11. (New) The high-frequency simulation apparatus according to claim 10, further comprising an analysis unit executing an analysis by using at least one of the elements corresponding to an integrated resistance value as an RLC model and using other elements as high-frequency element models when said third determination unit determines that the integration result reaches the predetermined value immediately before the second threshold value.

12. (New) The high-frequency simulation apparatus according to claim 11, wherein said analysis unit executes the analysis by using RLC models for all of the elements of the circuit when the total resistance value is less than the first threshold value.